

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

New Claims 20-23 have been added by way of this Amendment and are readable on the elected invention and the elected species. Thus, the claims currently pending in this application are Claims 2-19. Claims 7, 8 and 17 remain withdrawn from further consideration as being directed to the non-elected invention and the non-elected species.

Of the claims currently at issue in this application, Claims 2 and 12 are the only independent claims.

The Official Action repeats the rejection of independent Claim 2, and also rejects independent Claim 12 presented in the earlier filed response, on the basis of the disclosure contained in U.S. Patent No. 3,412,628 to *De Gain*. That rejection is respectfully traversed for at least the following reasons.

As was pointed out in the prior response, *De Gain* discloses a shock absorbing structural member 10 having cylindrical end portions 14, 16 and a plurality of outwardly bulging accordion-like portions 22 each bordered by a pair of grooves 24. The arrangement of grooves 24 and outwardly bulging accordion-like portions 22 extends over virtually the entire longitudinal extent of the structural member 10. As noted in the earlier response, the shock absorbing structural member 10 disclosed in *De Gain* is not constructed such that plastic deformation of the crash box due to axial load starts at the initial buckling portion and progresses toward the other end of the crash box from the

initial buckling portion so that the part of the crash box having no initial buckling portion is gradually deformed as recited previously in Claim 2. Rather, the shock absorbing structural member 10 disclosed in *De Gain* is provided with the grooves 24 extending along virtually the entire longitudinal extent of the structural member 10. In addition, as was also noted in the earlier response, *De Gain* does not disclose an initial buckling portion formed before the vehicle bumper is mounted on the vehicle and located closer to one end of the hollow crash box than the other end, with the start of plastic deformation of the hollow crash box occurring at a specific portion of the hollow crash box defined by the initial buckling portion and proceeding toward an adjacent portion of the hollow crash box as set forth previously in Claim 12.

It is understood from the comments on page four of the Official Action that the rejection of independent Claims 2 and 12 based on the disclosure in *De Gain* is premised on the observation that differences between the claimed vehicle bumper and the bumper disclosed in *De Gain* are not sufficiently spelled out in the claims. To better define these differences, independent Claim 2 has been amended to define that the initial buckling portion is formed only in a predetermined portion of the crash box that is close to one of the first and second ends, and with a part of the crash box having no initial buckling portion possessing a constant cross-section along the axial direction of the crash box. Also, Claim 12 has been amended to define that the initial buckling portion is formed by plastic deformation of a part of the crash box before the vehicle bumper is mounted on the vehicle and is located only in that part of the crash box, with the entire part of the crash

box in which is located the plastically deformed initial buckling portion being closer to the first end of the hollow crash box than the second end of the hollow crash box.

This claimed construction of the vehicle bumper differs from the shock absorbing structural member disclosed in *De Gain*. For example, the grooves 24 of the shock absorbing structural member disclosed in *De Gain* extend along virtually the entire longitudinal extent of the structural member 10 and are thus not formed only in a predetermined portion of the structural member 10 that is close to one of the ends of the structural member 10 as recited in Claim 2. In addition, *De Gain* does not describe that plastic deformation of the structural member due to an axial load starts at the grooves 24 and progresses toward the other end from the grooves 24 so that the part of the structural member 10 having no grooves 24 is gradually deformed. *De Gain* also does not describe that the part of the crash box having no initial buckling portion (i.e., the part of the structural member 10 other than the grooves 24) possesses a constant cross-section along the axial direction of the structural member 10 as set forth in Claim 2.

Independent Claim 12 is also distinguishable in that it recites that the initial buckling portion is formed by plastic deformation and is located only in a part of the crash box, and that the entire part of the crash box in which is located the initial buckling portion is closer to the first end of the hollow crash box than the second end of the hollow crash box. Quite clearly, by virtue of the fact that the grooves 24 of the shock absorbing structural member disclosed in *De Gain* extend along virtually the entire longitudinal extent of the structural member 10, the grooves 24 are not located only in a part of the structural

member 10 that is entirely located closer to one end of the structural member 10 than the other as set forth in Claim 12.

The disclosure contained in U.S. Patent No. 3,831,997 to *Myers* which is relied upon to address features recited in various dependent claims does not make up for the deficiencies pointed out above.

For at least the reasons set forth above, it is submitted that the claimed vehicle bumper defined in independent Claims 2 and 12 is patentably distinguishable over the disclosure contained in *De Gain*.

The dependent claims are also allowable as they depend from allowable independent claims. In addition, the dependent claims define further distinguishing characteristics associated with the claimed vehicle bumper. For example, new dependent Claims 20 and 22 define that the crash box has a substantially rectangular cross-section with two partitions perpendicular to each other and extending along the axis of the crash box to divide the crash box interior into four sections. In addition, new Claim 21 defines that the initial buckling portion is located only at the portion of the hollow crash box that is close to the bumper reinforce while Claim 23 recites that the entirety of the part of the crash box in which is located the initial buckling portion is located closer to the bumper reinforce than the vehicle body of the vehicle. These features are not disclosed in *De Gain*.

Claim 16 as presented in the earlier filed response defined that the initial buckling portion is devoid of holes passing through the hollow crash box. The Official Action comments that the cylindrical end 24 of the structural member 10 constitutes the initial

buckling portion and is devoid of holes. However, as now recited, the initial buckling portion is a plastically deformed portion and so Claim 16 recites that this plastically deformed portion is devoid of holes. This is not disclosed in *De Gain*.

Early and favorable action with respect to this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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July 21, 2003